

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please ADD new claim 36 in accordance with the following:

1-15. (canceled)

16. (previously presented) A method for synchronization of mobile stations in a radio communication system that is at least partly self-organizing and has mobile stations which are situated in reciprocal radio range via an air interface, comprising:

transmitting synchronization sequences from at least some of the mobile stations;
using the synchronization sequences from other mobile stations so that each mobile station can synchronize itself; and

for at least one of the mobile stations, transmitting payload data with a range that is less than a range for synchronization sequences transmitted by the mobile station.

17. (previously presented) The method according to claim 16, wherein the synchronization sequences are part of a data packet which carries information.

18. (previously presented) The method according to claim 16, wherein the synchronization sequences are transmitted on a dedicated synchronization channel.

19. (previously presented) The method according to claim 16, wherein in order for a mobile station to synchronize itself, the mobile stations derives an internal synchronization position, the internal synchronization position being derived from synchronization positions detected from the other mobile stations.

20. (previously presented) The method according to claim 19, wherein when deriving the internal synchronization position, the mobile station takes into consideration a quality level of each of the detected synchronization positions and/or its preceding synchronization position.

21. (previously presented) The method according to claim 16, wherein synchronization

sequences are transmitted in the same burst which also carries the payload data.

22. (previously presented) The method according to claim 16, wherein the synchronization sequences are transmitted via bursts which are separate from payload data bursts.

23. (previously presented) The method according to claim 16, wherein the synchronization sequences are transmitted cyclically or periodically.

24. (previously presented) The method according to claim 16, wherein the mobile stations transmit a quality level of their synchronization together with the synchronization sequences in order to improve synchronization.

25. (previously presented) The method according to claim 24, wherein the synchronization sequences are transmitted via bursts which are separate from payload data bursts.

26. (previously presented) The method according to claim 16, wherein the mobile station uses the synchronization sequences to synchronize time slots.

27. (previously presented) The method according to claim 16, wherein only one mobile station starts a transmit operation within each time slot.

28. (previously presented) The method according to claim 22, wherein the synchronization sequences are transmitted cyclically or periodically.

29. (previously presented) The method according to claim 28, wherein the mobile stations transmit a quality level of their synchronization together with the synchronization sequences in order to improve synchronization.

30. (previously presented) The method according to claim 29, wherein the synchronization sequences are transmitted via bursts which are separate from payload data bursts.

31. (previously presented) The method according to claim 30, wherein the mobile station uses the synchronization sequences to synchronize time slots.

32. (previously presented) The method according to claim 31, wherein only one mobile station starts a transmit operation within each time slot.

33. (previously presented) A mobile station for a radio communication system which is at least partly self-organizing, comprising:

a transmitter to:

send synchronization sequences with reference to which other mobile stations can synchronize themselves, and

send payload data with a range that is less than a range for the synchronization sequences sent by the mobile station.

34. (previously presented) The mobile station according to claim 33, further comprising: a receiver to receive synchronization sequences from other mobile stations.

35. (previously presented) A radio communication system that is at least partly self-organizing, comprising:

a plurality of mobile stations each having a transmitter to:

send synchronization sequences with reference to which other mobile stations can synchronize themselves, and

send payload data with a range that is less than a range for the synchronization sequences sent by the mobile station.

36. (new) A method for synchronization of mobile stations in a radio communication system that is at least partly self-organizing and has mobile stations which are situated in reciprocal radio range via an air interface, comprising:

transmitting synchronization sequences from at least some of the mobile stations;

using the synchronization sequences from other mobile stations, such that each mobile station can synchronize itself; and

for at least one of the mobile stations, transmitting payload data with a range that is less than a range for synchronization sequences transmitted by the mobile station, thereby defining a guard zone as the region in between the range of the payload data and the range of the

synchronization sequences,
wherein synchronization is performed without GPS.